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09/933,626	08/20/2001	John J. Light	42390P12159	6417

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EXAMINER
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FAULK, DEVONA E

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 04/05/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/933,626

Applicant(s)

LIGHT ET AL.

Examiner

Devona E. Faulk

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1--29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1,2,8, 9 and 11** are rejected under 35 U.S.C. 102(b) as being anticipated by Young, III (U.S. Patent 5,694,467).

Regarding **claim 1**, Young discloses a integrated sound/telephone headset system (Figure 1) comprising a mixer (22) that is connected to a microphone (42) that provides ambient noise (column 4, line 11), which reads on and “a mixer coupled to an ambient audio source to receive an ambient audio signal ”and connected to a sound generation device (30) through music feed (16), and to a phone line (26, 27) which reads on “a mixer coupled to an external audio source to receive an external audio signal”. Young further teaches that the mixer (22) mixes the multiple signals that generate sound and sends the mixed signals to headset (40) (column 4, lines 1-18) and that headphone speakers (44 and 46) that that receive an output from the mixer (22) which reads on “the mixer to mix the external audio signal and the ambient audio signal according to a specified relationship” and “a speaker to the mixer to emit the external audio signal and the ambient audio signal into an ear canal of a user after the external audio signal and the ambient audio signal have been mixed by the mixer”.

**Claim 2** claims the apparatus of claim 1, wherein the ambient audio source, the mixer, and the speaker are an integrated assembly. Integrated is defined as “to join with something

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else” or “make part of a larger unit”. Therefore Young’s ambient audio source, mixer and speaker are an integrated assembly.

**Claim 8** claims the apparatus of claim 1, wherein the external audio source is selected from the group consisting of: a telephone; an audio playing device; and a personal electronic device. Young teaches of two external audio sources, one being the sound generating device (30) and the phone line (26, 27) (column 4, lines 1-18) (See abstract).

**Claim 9** claims the apparatus of claim 1, wherein the ambient audio source is a microphone to capture ambient sound. As stated above apropos of claim 1, Young teaches that the microphone (42) provides ambient noise (column 4, line 11).

Regarding **claim 11**, Young discloses a integrated sound/telephone headset system (Figure 1) comprising a mixer (22) that is connected to a microphone (42) that provides ambient noise (column 4, line 11), which reads on and “receiving an ambient audio signal” and connected to a sound generation device (30) through music feed (16), and to a phone line (27) which reads on “receiving an external audio signal from an external audio source”. Young further teaches that the mixer (22) mixes the multiple signals that generate sound and sends the mixed signals to headset (40) (column 4, lines 1-18) and that headphone speakers (44 and 46) that that receive an output from the mixer (22) which reads on “mixing the external audio signal and the ambient audio signal according to a specified relationship” and “emitting the external audio signal and the ambient audio signal into an ear canal of a user after the external audio signal and the ambient audio signal have been mixed according to the specified relationship”. The method is inherent in the functionality of the system.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 3** is rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Rast (U.S. Patent Application 2001/0046304).

Regarding **claim 3**, Rast discloses a headset with a sound selective acoustical isolation system that enables blocking of noise and allows the user to determine whether or not he hears the external environment (page 8, paragraphs, 0055 and 0061). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to replace Young's headset with Rast's headset for the benefit of enabling the user to better distinguish between what noises are important for he or she to hear and what noises are non-essential.

5. **Claim 4** is rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Blum et al. (WO 99/53612).

Regarding **claim 4**, Blum teaches of a control (10,11) that enables the user to control the mixture of audio signals on the preference from hearing impaired and non-hearing impaired listeners (See abstract). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Blums method of mixing for the benefit of giving the user the option of deciding what he or she wanted mixed.

6. **Claim 5** is rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Soli et al. (U.S. Patent 6,563,931).

Regarding **Claim 5**, Soli discloses an auditory prosthesis and method comprising a filter 10 are rapidly adjusted during a human or user actuated adapting mode to provide for filtering of a selected unwanted component of the ambient auditory signal, such as constant background noise present in the user's environment (column 6, line 66-column 7, line 15). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Young's apparatus to include a voice amplifier for the benefit of providing clear speaking and hearing capability.

7. **Claim 6** is rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Neoh (U.S. Patent 6,668,204).

Regarding **claims 16-19**, Neoh teaches of a device and method to improve the listening experience for users of headphones or hearing aids comprising testing a user's hearing and optimizing the listening experience for the user. The coefficients could be downloaded to and stored within the hearing aids (See Abstract) (columns 3-5). The user can choose a frequency and is prompted to adjust the balance until that frequency is achieved (column 3, line 66-column 4 line 11). Thus it would have been obvious modify Young's system to incorporate Neoh base unit for the benefit of enabling the user to calibrate his or her headset to meet his or her specific needs.

8. **Claim 7** is rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Sugihara (U.S. Patent 6,218,971).

Regarding **claim 7**, Sugihara teaches of a digital mixer (17a) that is a DSP (column 3, lines 48-60). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Young's mixer so that it can function as a DSP for the benefit of being able to perform additional processing on the signals received.

9. **Claim 10** is rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Prince (U.S. Patent 6,360,203).

Regarding **claim 10**, Prince teaches of using two microphones to measure ambient noise without a voice signal (column 1, lines 37-57). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Young's apparatus by incorporating another microphone as claimed for the benefit of enabling cancellation of noise.

10. **Claims 12 and 13** are rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Rast (U.S. Patent Application 2001/0046304).

Regarding **claims 12 and 13**, Rast discloses a headset with a sound selective acoustical isolation system that enables blocking of noise and allows the user to determine whether or not he hears the external environment (page 8, paragraphs, 0055 and 0061). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to replace Young's headset with Rast's headset for the benefit of enabling the user to better distinguish between what noises are important for he or she to hear and what noises are non-essential.

11. **Claims 14 and 15** are rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Soli et al. (U.S. Patent 6,563,931).

Regarding **Claims 14 and 15**, Soli discloses an auditory prosthesis and method comprising a filter 10 are rapidly adjusted during a human or user actuated adapting mode to

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provide for filtering of a selected unwanted component of the ambient auditory signal, such as constant background noise present in the user's environment (column 6, line 66-column 7, line 33). Soli further teaches that the user, or other human, can activate the adapting mode of filter 10 by supplying activated control input 18. Activated control input 18 may simply be a push button switch which sends the activated control input 18 signal when the button is, preferably momentarily, pushed. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Young's apparatus to include Soli's filter for the benefit of providing clear speaking and hearing capability.

12. **Claims 16-19** are rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Neoh (U.S. Patent 6,668,204).

Regarding **claims 16-19**, Neoh teaches of a device and method to improve the listening experience for users of headphones or hearing aids comprising testing a user's hearing and optimizing the listening experience for the user. The coefficients could be downloaded to and stored within the hearing aids (See Abstract) (columns 3-5). The user can choose a frequency and is prompted to adjust the balance until that frequency is achieved (column 3, line 66-column 4 line 11). Even though Neoh doesn't particularly teach of a medical professional implementing the testing, it is well known that hearing test are mostly done with the assistance of a medical professional. It is obvious that an outgoing audio signal is transmitted from the user to the computer when determining the parameters that would best fit the listener's need. Thus it would have been obvious modify Young's system to incorporate Neoh base unit for the benefit of enabling the user to calibrate his or her headset to meet his or her specific needs.



13. **Claims 20-22,23,24-26,27 and 29** are rejected under 35 U.S.C. 103 (a) as being unpatentable over Rast (U.S. Patent Application 2001/0046304).

Regarding **claims 20 and 23**, Rast discloses a system for selective control of acoustic isolation in various forms of headsets comprising a headset (10) (Figure 3, the electronics for the headphones) including a digital signal processor and micro-controller (62) (page 5, paragraph 0053) which reads on “a processing unit”; the processor and micro-controller (62) contains an internal program store (ROM), a random access memory (RAM) and a sound characterization memory (63). This reads on “a memory coupled to the processing unit through a bus”. Even though Rast does not specifically teach of a bus coupling the memory to the processing unit, since the memory is contained in the processing unit it is inherent that their connection is through a bus. A bus is a circuit that connects the major components of a computer. The processing unit and memory are well known as major components of any computer. Therefore, it is obvious that a bus couples the memory and the processor/micro-controller. Rast further teaches of microphones (58a, 58b) that convert sound. Although Rast teaches of an embodiment that does not mix the audio and ambient signals, he mixes the ambient signals from the microphones with sound profiles stored in the sound characterization memory (page 5, paragraph 0051), he also teaches that in other applications, like radio communications, the headset could mix the incoming audio with the ambient audio sounds (page 8, paragraph 61). Therefore, it would be obvious in the case of radio communication that the DSP/micro-controller would receive both the input audio signals (52a-52d) and the ambient signals from the microphones (58a and 58b). The headset used in the radio communication environment would read then on the “ambient-aware headset” as claimed. Thus it would have been obvious to one of ordinary skill in the art at

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the time of the invention to use Rast's headset and system for the benefit of having a headset capable of radio communication without having the user lose audio contact with the environment.

**Claims 21 and 22** claims the system of claim 20, further comprising a microphone communicatively coupled to the headset to transmit an outgoing audio signal from the user to the communication device. Rast teaches of microphones (58a, 58b) that convert sound within the external acoustical environment. Each microphone converts the received external sound to an external sound signal (page 2, paragraph 0014). He further teaches that the apparatus is readily embodied in various types of headsets, including communication, audio and noise cancellation. It is obvious that the signal can be transmitted to some communication device. Rast further teaches of a sound selective acoustical isolation system that enables blocking of noise and allows the user to determine whether or not he hears the external environment (page 8, paragraphs, 0055 and 0061). Therefore, there is obviously some sort of user interface and that data could be stored. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Rast's headset for the benefit of enabling clear communication.

**Claim 24** claims the system of claim 23, wherein the communication apparatus is selected from the group comprising a wireless telephone signals transmission tower; and a wireless audio data signal transmission tower. Rast further teaches that the incoming audio source could be music over a wireless connection (column . It is obvious that if there is a wireless connection there is a corresponding signal tower. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to have the audio source be a wireless tower for the benefit of providing the user with the capability to use the headset remotely.

**Claim 25** claims the system of claim 23, further comprising a microphone communicatively coupled to the headset to transmit an outgoing audio signal from the user to the communication device. Rast teaches of microphones (58a, 58b) that convert sound within the external acoustical environment. Each microphone converts the received external sound to an external sound signal (page 2, paragraph 0014). He further teaches that the apparatus is readily embodied in various types of headsets, including communication, audio and noise cancellation. It is obvious that the signal can be transmitted to some communication device. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Rast's headset for the benefit of enabling clear communication.

14. Regarding **claim 26**, Rast discloses a system for selective control of acoustic isolation in various forms of headsets comprising a headset (10) (Figure 3, the electronics for the headphones) including a digital signal processor and micro-controller (62) (page 5, paragraph 0053) which reads on "a processing unit"; the processor and micro-controller (62) contains an internal program store (ROM), a random access memory (RAM) and a sound characterization memory (63). Rast further teaches the headset receiving input from microphones (58a, 58b) that convert sound within the external acoustic environment and input audio source connections (52a-52d). This reads on receiving an external audio signal from an external audio source" and "receiving an ambient audio signal". Although Rast teaches of an embodiment that does not mix the audio and ambient signals, he mixes the ambient signals from the microphones with sound profiles stored in the sound characterization memory (page 5, paragraph 0051), he also teaches that in other applications, like radio communications, the headset could mix the incoming audio with the ambient audio sounds (page 8, paragraph 61) so that the radio communication function

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is realized without the wearer losing audio contact with the environment. Therefore, it would be obvious in the case of radio communication that the DSP/micro-controller would receive both the input audio signals (52a-52d) and the ambient signals from the microphones (58a and 58b). The headset used in the radio communication environment would read then on the "mixing the external audio signal and the ambient audio signal according to a specified relationship" as claimed and "emitting the external audio signal and the ambient audio signal into an ear canal of a user after the external audio signal and the ambient audio signal have been mixed according to a specified relationship". Although he does not specifically teach of machine-readable medium, having instructions to execute the method, he does teach of a DSP/micro-controller, having a program store, ROM. It is obvious than that there is a machine-readable medium and that there are instructions stored therein. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Rast's headset and system for the benefit of having a headset capable of radio communication without having the user lose audio contact with the environment.

**Claims 27 and 29** are claims the machine-readable medium of claim 26, wherein the method further comprises blocking entrance to the ear canal of the user by the ambient audio signal that has not been mixed according to a specified relationship. Rast discloses a headset with a sound selective acoustical isolation system that enables blocking of noise and allows the user to determine whether or not he hears the external environment (page 8, paragraphs, 0055 and 0061). As stated above apropos of claim 26, although he does not specifically teach of machine-readable medium, having instructions to execute the method, he does teach of a DSP/micro-controller, having a program store, ROM. It is obvious than that there is a machine-

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readable medium and that there are instructions stored therein. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to replace Young's headset with Rast's headset for the benefit of enabling the user to better distinguish between what noises are important for he or she to hear and what noises are non-essential.

15. **Claim 28** is rejected under 35 U.S.C. 102(b) as being unpatentable over Rast (U.S. Patent Application 2001/0046304 in view of Soli et la. (U.S. Patent 6,563,931).

**Claim 28** claims the machine-readable medium of claim 26, wherein the method further comprises at least one of the group consisting of: filtering noise from the ambient audio signal; and compensating for a hearing defect of the user. Soli discloses an auditory prosthesis and method comprising a filter 10 are rapidly adjusted during a human or user actuated adapting mode to provide for filtering of a selected unwanted component of the ambient auditory signal, such as constant background noise present in the user's environment (column 6, line 66-column 7, line 33). Soli further teaches that the user, or other human, can activate the adapting mode of filter 10 by supplying activated control input 18. Activated control input 18 may simply be a push button switch which sends the activated control input 18 signal when the button is, preferably momentarily, pushed. ). As stated above apropos of claim 26, although he does not specifically teach of machine-readable medium, having instructions to execute the method, he does teach of a DSP/micro-controller, having a program store, ROM. It is obvious than that there is a machine-readable medium and that there are instructions stored therein. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Young's apparatus to include Soli's filter for the benefit of providing clear speaking and hearing capability.

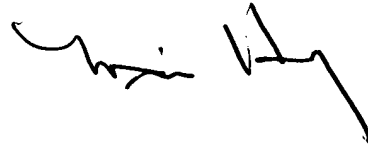
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 703-305-4359. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**MINSUN OH HARVEY  
PRIMARY EXAMINER**